PATENTS

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In re application of
Oliver et al.
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For: SYSTEM FOR MANAGEMENT OF TRANSACTIONS ON NETWORK

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RESPONSE TO OFFICE ACTION OF 3 JUNE 1999 INCORPORATING AMENDMENT COPYING CLAIM FROM ISSUED PATENT AND REQUESTING DECLARATION OF AN INTERFERENCE [37 C.F.R. 607(a) and (c)]

APPENDIX E

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CLICKSHARE SERVICE CORP.
ANALYSIS OF TEPER ET AL. CLAIMS
(v2.0 09-27-99 including citations to Oliver et al.)

Text from Teper et al. is shown in light-face 10-point type in narrow column width.
Annotating comments by Clickshare Service Corp. are shown in italics10-point type across the full width.
Excerpts from Oliver et al. are shown in lift-face, 12-point type, surrounded by quotations.

IMPORTANT NOTE: Within Oliver, references occur throughout to the "home" Publishing Member of the user. Subsequent to filing of the patent application, a decision was made to standardize the reference to a "home" Publishing Member as a "Clickshare Service Provider." The patent application refers at some points to the Service Provider and at other points to the "home Publishing Member." These terms are interchangeable and are distinct from the generalized mention of a "Publishing Member" – an entity which sells information resources but does not maintain an account relationship with users. The Fig. 1 accompanying the patent application records this duplicate terminology with the reference inside the circle of the "Home" Publishing Member which reads: "Client . . . Home Publishing Member – a/k/a Clickshare Srvc Provider."

1. A method of providing an online service to a user over a public network, the online service provided by a Service Provider (SP) site to a user computer via the public network, the method comprising the steps of:

Oliver also describes a service to users over a public network provided by a Clickshare Service Provider to a user computer via the public network and also by Clickshare Publisher Member(s) to a user computer via the public network.

Oliver at Page 6, Lines 9-13:

"The Clickshare/TVS Service is a distributed user-management service for Internet information micropayments, access control, audience measurement and personalization with one-ID, one-bill user convenience. It is designed to address the problem of how to charge Internet users for their use of resources and control their access to those resources. It is also designed to provide for the transfer of information about users among multiple web sites in order to control access or define service authorization."

Oliver at Page 7, Lines 12-26:

"INFORMATION SELLERS/RESOURCE PROVIDERS -- Operators of World Wide Web sites who wish to make money from the sale of information or software, or wish to control access to resources. These are called Clickshare Publishing Members or Clickshare Resource Providers. Examples include: newspapers, magazines, specialty publications, new-media entrepreneurs, game vendors, software publishers, health-care providers, network or other service providers.

"BILLING AGENTS/SERVICE PROVIDERS -- Consumers have preexisting, ongoing credit relationships with billing agents or service providers who agree to become

Clickshare Service Providers. In exchange for a negotiated share of the "Clickstream" revenue from information sales, or for other consideration, these service providers assume responsibility for servicing and billing consumer or enterprise end users and for authenticating the user at the start of a Clickshare/TVS session. Examples include: Internet Service Providers, newspapers, specialized publishers, online services, telephone companies, cable and utility companies, credit-card issuing banks, health-care providers, retailers, other consumer-credit entities, network or other service providers and other enterprises."

sending a request message from the user computer to the SP site over the public network to request the use of the online service;

Oliver describes the sending of a request message from the user computer to a Publishing Member site (analagous to the "service provider" in Teper) to request a resource from the site.

generating a challenge message at the SP site in response to the request message and sending the challenge message over the public network to the user computer;

Oliver describes the Publishing Member site responding to an HTTP request for service with a request for to the end-user's computer for the user to either "log-in" to that Publishing Member site or provide a hint to the PubMbr site of where to redirect the user for authentication. (See accompanying screen shot, labeled as Exhibit A)

generating a response message in the user computer in response to the challenge message and sending the response message over the public network to the SP site, the response message including or being based upon an identifier of the user;

Oliver describes the end user, in response to the authentication challenge, replying with an identifying user name/password string, or, if the user name/password string has been cached in the web browser, the user computer returns the string automatically.

Oliver Page 48, Lines 2-5:

"To begin, the user points his WWW browser to the home page set up for him at his "home" Publishing Member (step 1). This page has been designated as "authentication required" by the Publishing Member, so the user's browser receives back from the Publishing Member's HTTP server an appropriate status message. The browser prompts the user for his user-name and password, which it then returns to the HTTP server as Request Header information."

sending at least the response message from the SP site to a remote online broker site, the online broker site having a brokering database which contains account information of registered users of an online brokering service of the online broker site;

Oliver describes the sending by a Clickshare Service Provider [otherwise known as "home" Publishing Member] site of an authentication request to the Clickshare Token Validation Service ("online brokering service"), along with user preference information, in order to obtain an encoded, session-based token identifying that user.

Oliver Page 48, Lines 15-25:

"Once the HTTP server has obtained the user's Authentication information and has validated it locally, the HTTP server contacts TVS with a request for a new Authentication Token. In making this request, the HTTP server sends the user's profile to TVS with a request for a new Authentication Token. This profile information (along with other per-user information) is stored in each publisher's registration database.

"7.3 TOKEN GENERATION AND RETURN

"TVS uses information from the user's profile to build the Authentication token. For example, the user's service class information is used to determine what the token's validity period will be. The Authentication Token has an encrypted "payload" and is "uuencoded" and "sanitized" to accommodate the Web URL naming syntax where required. The token is "opaque" to both the HTTP server and to the Web browser client."

And Oliver at Page 17, Lines 10-26:

"TVS introduces the notion of a "session" into the World Wide Web. Once a user is authenticated by his "home" Publishing Member, that Publishing Member provides user profile information to its TVS server, which returns an authentication token that is valid for a restricted period of time. Once given this token, the user can access any TVS-enabled HTTP server for the duration of validity without reauthentication. This time period is the "session".

"Publishing Members maintain a "user profile" of each User Member. This profile contains three types of information: "preference" information, "service class" information and, if desired, "pricing" information. Preference information is given by the user member, while service-class information and pricing information are provided by the Publishing Member. These types of information relate to the variety and quality of services offered by the Publishing Member, and each may affect the cost of that service. Some of the profile information can be changed on a session basis, where other types can only be changed by the Publishing Member at fixed points.

Oliver Page 18, Lines 3-8:

"At the start of each session, this profile information is passed to the TVS server when the HTTP server requests an authentication token for the user. The information is loaded by the TVS server into a Dynamic Session Database. When, during the session, any Publishing Member requests that TVS validate this

authentication, TVS returns the profile information to that Publisher as part of the authentication. Thus, even though each user is "owned" by only one Publishing Member (the "home"), all Publishing Members have access to that user's profile information through TVS."

Oliver also describes the sending of that token by a Clickshare Publishing Member site (know as the SP site in Teper) to the Clickshare Token Validation Service (known as the "online brokering service" in Teper). In both Teper and Oliver the back-end service (TVS or "online brokering service") has a database which contains account information of registered users.

Oliver at page 50, lines 2-7:

"The HTTP server contacts the TVS server to verify that the provided token is valid (that is, this is a valid user and a valid session).

"7.7 VERIFICATION AND PROFILE RETURN

"The TVS server receives the request, and verifies it using the internal databases it has constructed from the information provided when Authentication Tokens are issued. As an acknowledgment, TVS returns the user's profile information to the HTTP server."

Oliver at Page 30, Lines 7-21:

"The TVS server maintains a Dynamic Session Database (short-lived) of active sessions, indexed by user identification number, "home" publisher affiliation, and the user's host IP address. Among the data contained in the Dynamic Session Database are:

-- Alpha-numeric identifying number of the user
-- User-owning publishing-member number (Clickshare Service Provider)
-- Session number
-- Current number of authentications (cumulative)

-- User service parameters including:
-- Parental control flag (ON/OFF)
-- Full ads / links only / no ads
-- Pricing query threshold
-- Service-class designator (price markup value)
-- Session start time
-- Topical information preferences (if "open")
-- Age, sex, income, demographic profile (if "open")"

Oliver page Page 49, Lines 4-8:

"When the HTTP server receives the returned token, it is ready to deliver the requested content (as well as the token) to the requesting client. The content is delivered in the canonical HTTP method (accompanied by MIME Response Headers as appropriate). The Authentication token can be delivered to the user's client program (Mosaic, Netscape, Lynx, an "agent", etc.) in several ways."

Oliver, Page 50, Lines 9-14:

"7.8 CONTENT RETURN

The HTTP server uses the profile information to determine how best to respond to the user's request. In some cases, information in the profile may indicate that the server should not respond -- or warn the user about the cost of nature of the information requested. The profile information returned to the HTTP server can be used by the server itself to fulfill the request (typically the case with standard "static" file service requests), and is also made available as part of the execution environment for Common Gateway Interface (CGI) scripts."

processing the response message at the remote online broker site to determine whether the response message is authentic, the step of processing comprising accessing the account information in the brokering database;

Oliver describes the processing of a response message containing a user token to see if the token is valid (i.e., issued previously by the Token Validation Service), including the step of accessing a "dynamic session database" containing account information of registered users with an active session underway.

Oliver at page 50, lines 5-7::

"7.7 VERIFICATION AND PROFILE RETURN

"The TVS server receives the request, and verifies it using the internal databases it has constructed from the information provided when Authentication Tokens are issued. As an acknowledgment, TVS returns the user's profile information to the HTTP server."

sending a verification message from the remote online broker site to the SP site, the verification message indicating whether the response message is authentic;

Oliver describes TVS sending a verifying message to the Publishing Member web site, indicating whether the response message (in Clickshare, the "token") is authentic – that it represents a key to a set of data within the dynamic session database relating to a particular user's active session

underway.

Oliver at page 50, lines 5-7:

"7.7 VERIFICATION AND PROFILE RETURN

"The TVS server receives the request, and verifies it using the internal databases it has constructed from the information provided when Authentication Tokens are issued. As an acknowledgment, TVS returns the user's profile information to the HTTP server."

retrieving access rights data of the user from the brokering database if the response message is authentic, the access rights data specifies a plurality of content categories to which the user has access, the plurality of content categories corresponding to a plurality of different online services offered by the SP site;

Oliver describes the retrieving by TVS ("online broker") from its dynamic session database of service class data (determining access rights and content categories).

sending the access rights data from the online broker site to the SP site;

Oliver describes the sending of such service-class data from TVS ("online broker site") back to the Clickshare Publishing Member ("SP") site.

providing the online service from the SP site to the user computer over the public network if the verification message indicates that the response message is authentic; and

Oliver describes the step of the Publishing Member ("SP") site sending requested information to the end-user's computer if the message received from TVS ("online broker site") confirms that the token submitted was found to be associated with a set of user data in the TVS dynamic session database.

Oliver at Page 57, Lines 23-25; Page 57, Lines 1-2:

"26. A method as recited in claim 24, which includes an acceptance step by which a client's token is accepted by a method member from whom the client wishes to receive services or goods across a data network, and is instantaneously submitted to the method's common service point, which, if the token's contents match that of a token in the common service point's dynamic session database, returns preference, pricing and service-class information about the requesting client, prior to the providing of the requested services or goods across a data network."

denying access by the user to the online service if the verification message indicates that the response message is not authentic.

Oliver describes the condition of a "bad token" in which the end user's computer is sent a message denying access to requested content. [See Exhibit B, attached hereto]

Oliver at Page 51, Lines 2-14:

"7.10 HANDLING VALIDATION TIME-OUT

When a user's Authentication Token "times-out", information requests made with that token are invalid. If the user does not specifically end his session prior to this time-out, it is likely that the user will be making an information request to a Publishing Member other than his "home" when the time-out happens.

"TVS, in cooperation with the HTTP servers, provides a mechanism to return the user to his "home" Publishing Member, undertake the process of re-authentication, and return to the site of the timed-out request - all transparently to the user. This process is handled using HTTP "Redirect" responses, but the key to success is the association with TVS which is the only party that knows where the user's home can be found.

"A similar process works when completely invalid tokens are presented to TVS for verification. In such cases, TVS instructs the HTTP server to redirect the user to known points (in the current case, to Clickshare Service Corp.'s pages) such that the user can return "home" himself, or can select a "home" if necessary.

2. A method as in claim 1, wherein the step of generating a response message comprises obtaining a password of the user.

Oliver describes a process in which the user enters a user name and password as a response to the request from the Clickshare Publishing Member for authentication.

3. A method as in claim 2, wherein the step of generating the response message further comprises applying a cryptographic algorithm to at least the challenge message such that the resulting response message depends upon both the challenge message and the password.

Oliver does NOT describe any use of crytographic algorithms in the interactions between the end user's computer and the Clickshare Publishing Member or Clickshare Service provider.

4. A method as in claim 2, wherein the step of obtaining the password of the user comprises retrieving the password from a password cache on the user computer, the password cache temporarily storing the password following manual entry by the user, the method thereby enabling the user to access multiple SP sites without re-entering the password.

Oliver describes the use of the password cache within the web browser software on the user's computer to retrieve the temporarily stored user name/password string provided earlier by the user so as to be able to access multiple web sites without re-entering the password.

Oliver at Page 31, Lines 8-10:

"Users with active sessions will have to re-authenticate with their home publisher, but this is transparent given graceful handling by the TVS client web server and caching of username/password in most browsers."

5. A method as in claim 1, further comprising the steps of: assigning an anonymous identifier to the user at the online broker site and sending the anonymous identifier to the SP site to enable the SP site to anonymously charge the user for an online service; and generating a billing event at the SP site and sending the billing event to the online broker site, the billing event specifying at least (1) the anonymous identifier of the user, and (2) a monetary charge to be applied to an account of the user.

Oliver describes the steps of the Token Validation Service (online broker) constructing (assigning) a token (anonymous identifier) and sending the token to the Clickshare Service Provider (service provider) site to enable the Service Provider site to in turn provide the token to web-browser software on the end-user's computer, which browser may in turn provide the token to Clickshare Publishing Member websites when the user seeks service from the publishing member site. The Publishing Member website generates an enhanced log report (billing event) and sends the log report to the Token Validation Service (online broker), the log report specifying at least (a) the token (anonymous identifier) specific to that particular user's and (b) a monetary charge to be applied to the account of the user.

Oliver at Page 16, Lines 14-23:

"Using the TVS model, individual publishers or service providers authenticate their own users, and then ask TVS to store the user's preference, pricing and service-class information in a "publicly accessible" place. In return, TVS provides an authentication token which is returned to the user (specifically, the user's browser). All subsequent access to any TVS-enabled service is governed by this token (non-TVS services are not affected). TVS validates the token on behalf of any individual service, and passes in return the user's profile and class information. When a server has provided service to a validated user, that server returns to TVS a record of the service provided. This record is used by TVS to generate a number of forms of usage information, particularly billing and settlement information. Periodically, this information is returned to all publishers."

Oliver at Page 17, Lines 10-16:

"TVS introduces the notion of a "session" into the World Wide Web. Once a user is authenticated by his "home" Publishing Member, that Publishing Member provides user profile information to its TVS server, which returns an authentication token that is valid for a restricted period of time. Once given this token, the user can access any TVS-enabled HTTP server for the duration of validity without reauthentication. This time period is the "session".

Oliver at Page 34, Lines 3-24 and Page 35, Lines 1-22:

"5.13.1. CLICKSHARE-ENHANCED LOG FORMAT

"The TVS client transmits to the server-side (logging facility) records of each access in an enhanced Common Log Format. Seven pieces of information are provided in the Common Log Format:

-- fully qualified domain name (or dotted decimal IP address) of the client
-- rfc931 user
-- auth user
-- date in dd/mm/yyyy:hr:mn:se -0XXX format (where 0XXX" is hours from GMT)
-- the request (a quoted string featuring method + URL filepart)
-- the HTTPD status code
-- the number of bytes transmitted to the client

"In addition, the TVS client transmits the following Clickshare-specific information:

-- content server ID (cs_contentpmid) -- A globally unique ID number identifying the company which served the content to the user. Clickshare Service Corp. maintains a map of ID numbers to company names and contact addresses.

-- page class (cs_pageclass) -- A numeric identifier for the value of the page served. The value is used as a lookup into a table of currency-denominated values which are used to price the page.

-- user ID (cs_userid) -- A user identifier, unique to each Clickshare service or content provider, that identifies the user within that provider's site.

-- home publisher ID (cs_homepmid) -- A globally unique ID number identifying the company which maintains the financial relationship with the user (user ID) for billing purposes.

-- session ID (cs_sessionID) -- An identifier for an activity session by a user. A session is a defined period of time during which an authentication token is valid. The length of a session can be requested by the user, or set by the home provider, upon startup). Sessions may be concatenated in time, but sessions cannot overlap. Session IDs are unique to each publisher for a period of about eight months.

-- customer group (cs_custgroup) -- A numeric identifier for the customer's local group. Two groups are global within Clickshare: Group 1, the default standard group and Group 15, the "testdrive" group. All other values are set locally by the

home publisher for his own reference.

-- service class (cs_serviceclass) -- A coded numeric identified for special service classing. Service classes may be related to markup ratios for retail pricing or may specific the types of services or goods which the user is authorized to acquire or receive.

-- flags (cs_flags) -- A coded numeric identifier which concatenates all the user-preference flag information (on/off flags) for this session. These preference flags relate to user privacy, parental-control (content selection) and other features and part of the "contract" between the user and the user's Clickshare Service Provider.

"Other open data blocks are designed to carry releasable demographics and topical preferences, or other metrics, including a Universal Resource Identifier [see Section 5.20] depending upon the requirements of Clickshare service members."

6. A method as in claim 5, further comprising the steps of:
establishing a connection between the user computer and the online broker site; and providing an online billing statement to the user over the connection, the online billing statement reflecting the monetary charge specified in the billing event.

(NOT ANALAGOUS TO CLICKSHARE ARCHITECTURE; WE HAVE A UNIQUE CLAIM HERE)

Oliver describes establishing a connection between the Token Validation Service (online broker site) and the Clickshare Service Provider site and providing periodic aggregated usage reports to the Clickshare Service Provider of access by the CSP's end-users to online resources at various Clickshare Publishing Member sites. Oliver also describes the transmission via Email of a periodic report of the end-user's usage to the end user's Email account from the Clickshare Service Provider.

7. A method as in claim 5, further comprising the step of sending a billing statement from the online broker site to the user computer over the public network, the billing statement reflecting the monetary charge specified in the billing event.

(NOT ANALOGOUS TO CLICKSHARE; WE HAVE A UNIQUE CLAIM HERE)

Op. Cit., above, Clickshare backend sends aggregated, periodic log reports to end-user's "home base" – the Clickshare Service Provider, which is responsible for sending and/or presenting those reports to the end user. We have thought about a direct query by the end user to the Clickshare backend in real time to support debit transactions but have not implemented.

8. A method as in claim 1, further comprising the steps of:
sending an access rights update request from the SP site to the remote online broker site, the access rights update request specifying an update to be made by the online brokering service to the access rights of the user; and
processing the access rights update request at the online broker site

by updating the access rights data of the user stored within the brokering database.

Clickshare describes the transmission of specific user profile, preference and service-class (access rights) information (updates) from the Clickshare Service Provider website to the Clickshare Token Validation Service backend (remote online broker site) at the time the end-user initiates a Clickshare session. The information (updates) is used to populate a database entry, a token is constructed which is a key to that database entry, and the token is returned to the Clickshare Service provider, which in turn is provided to the end-user's web browser. [See citations to Oliver et al. at Claim No. 5, above]

9. A method as in claim 1, further comprising the steps of:
retrieving user-specific preference data of the user from the brokering database and sending the preference data from the online broker site to the SP site, the preference data indicating at least one user-specified preference for the customization of online services; and
adjusting the online service provided from the SP site according to the user-specified preference.

Oliver describes the step of retrieving user-specific preference data of the user from the dynamic session database of the Clickshare Token Validation Service (brokering database) and sending the preference data from the TVS (online broker site) to the Clickshare Publishing Member (SP) site, the preference data indicating at least one user-specified preference for the customization of online services; and adjusting the online service provided from the Publishing Member (SP) site according to the user-specified preference, e.g., serving an advertisement for a product of interest to the user based on the user's preferences. [See citations to Oliver et al. at Claim No. 5, above]

Also, Oliver at Page 6, Lines 18-21:

"PERSONALIZATION -- It allows consumers to store their custom information preferences as part of their user profile and then optionally give those preferences to web publishers who wish to personalize their offerings."

10. A method as in claim 9, wherein the preference data includes a connection speed at which the user computer connects to the public network, and wherein the step of adjusting comprises providing the service to the user computer at a speed which is commensurate with the connection speed.

Oliver makes no specific mention of transferring preference data about connection speed.

11. A method as in claim 9, wherein the preference data includes a display preference for the display of a particular type of media.

Oliver makes no specific mention of transferring preference data about display of a particular type of media.

12. A method as in claim 1, further comprising the steps of:
generating a first session key at the user computer;
generating a second session key at the online broker site and sending the second session key to the SP site, the second session key corresponding to the first session key; and

using the first and second session keys to encrypt and decrypt message traffic between the user computer and the SP site as the online service is provided to the user computer.

Oliver makes no specific mention of encryption technology at the end-user level.

Oliver at Page 38, Lines 2-10:

"In the current implementation of the TVS service, almost no encryption is used. The only transacted item that is encrypted is the authentication token which travels along with each user request. This token is issued by the Clickshare/TVS authentication server, and only that server needs to "decrypt" it. All other parties (HTTP servers, and other TVS servers) treat the token as "opaque". Since only the originating TVS server will view the contents of the authentication token, a "private key" encryption algorithm can be used. That private key is stored on the authentication server which originates the token, and remains valid only for the duration of that user's session.

"Currently, TVS uses the IDEA encryption algorithm with a 128-bit key."

13. A method as in claim 1, wherein the public network comprises the Internet.

Oliver describes a preferred implementation using the Internet.

14. A method as in claim 1, wherein the steps of passing the request, challenge and response messages over the public network respectively comprise passing the request, challenge and response messages over a private network.

Oliver does not differentiate between an implementation on a public or private network.

Oliver at Page 2, Lines 20-21:

"It is, therefore, an outstanding object of the present invention to provide a system and method for managing transactions on networks."

15. A method providing a fee-based online service from a Service Provider (SP) site to a user over a public network while concealing the payment and personal information of the user from the Service Provider, comprising the steps of:

Oliver describes providing information and services for fees from a Clickshare Service Provider to a user over a public network while concealing the payment and personal information of the user from the Clickshare Publishing Members who provide the services or information.

Oliver at Page 13, Lines 10-12:

"In providing the TVS service, Clickshare Corporation or its licensee maintains only transitory knowledge of any specific user, and even then, only by a user identification number (not by demographic or financial information)."

Oliver at Page 14, Lines 13-26; Page 15, Lines 1-2:

"4.4. NO SPECIFIC PRIVACY MODEL ENFORCED

"Clickshare realizes that being involved in the "authentication" universe means dealing with sensitive personal financial information. There is a lively debate on-going among privacy advocates and content providers (who use the sales of lists of such information to enhance their revenues).

"The TVS model does not enforce a specific privacy model. The service itself operates by identifier numbers, not by names, and Clickshare Service Corp. -- on its own -- will not be able to correlate an ID with a person. However, nothing inherent in the TVS service specifically prevents a Publishing Member from making this correlation on his own through methods unrelated to the Clickshare service. It is possible within the design of TVS to offer a "Swiss-bank" type of "blind usage" for users that wish to pay for same. No such service is currently implemented.

"As designed, TVS will be able to collect and aggregate content usage information and "localize" this information to a specific user-ID and provider-ID. This alone will go a long way towards providing third party verification of use without direct reference to personal information."

providing an online broker site that provides an online brokering service, the online broker site having a brokering database which contains account information on the user and on other users of the online brokering service, the online broker site located remotely from the SP site; establishing a connection between a computer of the user ("user computer") and the SP site over at least the public network; generating an encrypted authentication message at the user computer and sending the authentication message to the online broker site via at least the public network;
verifying the authentication message at the online broker site to thereby authenticate the user, the step of verifying comprising accessing the account information of the user stored in brokering database;
generating an anonymous ID at the online broker site and sending the anonymous ID to the SP site to allow the SP site to charge the user for the online service;

Oliver describes providing a Token Validation Service (online broker site) having a dynamic session database (brokering database) which contains information on the user and other users of the Clickshare/TVS Service's affiliated Service Providers, the TVS (online broker site) being located

remotely from the Clickshare Publishing Member sites (SP site); establishing a connection between a computer of the user and the Clickshare Publishing Members site (SP site) over any network; generating an encoded or encrypted message at the Clickshare/TVS Service, sending that message to the Clickshare Service Provider, which sends it to the end-user's computer which submits it to the Clickshare Publishing Member website, which submits it to the Clickshare/TVS Service for authentication.

Oliver at Page 18, Lines 3-8:

"At the start of each session, this profile information is passed to the TVS server when the HTTP server requests an authentication token for the user. The information is loaded by the TVS server into a Dynamic Session Database. When, during the session, any Publishing Member requests that TVS validate this authentication, TVS returns the profile information to that Publisher as part of the authentication. Thus, even though each user is "owned" by only one Publishing Member (the "home"), all Publishing Members have access to that user's profile information through TVS."

providing the online service from the SP site to the user computer over the public network;

Oliver describes providing content (online) services from a Clickshare Publishing Member site (SP site) to the user computer over a network.

Oliver at Page 2, Lines 4-8:

" . . . Specifically, the Internet environment is very decentralized, and no one organization controls the user base or access to resources. While this decentralization has tremendous advantages (chief among them, the freedom to select from a wide number of service and content offerings), this lack of "unity" can confuse and sometimes frustrate both potential information providers and users . . . ."

Oliver at Page 4, Lines 22-25:

"TVS is a service for validating and profiling a large base of users distributed across independent content and service providers, simultaneously supporting content usage verification ("audience measurement"), billing at the "micro-transaction" ("per-page") level, and exchange of user attributes."

Oliver at Page 5, Lines 9-13:

"Using TVS, content providers can "share users" through a common validation/profiling technique and exchange value for their content through a common, background, process. By permitting owners of content to collect royalties and receive commissions automatically, TVS creates the economic incentive for content providers to link to each other's content in a manner that leverages the

content base of all providers simultaneously, and is completely transparent to the user."

retrieving user-specific customization data of the user from the brokering database and sending the customization data from the online broker site to the SP site, the customization data indicating a user-specified preference for the customization of the online service; adjusting the online service provided from the SP site according to the user-specified preference; and
generating a billing event at the SP site and sending the billing event to the online broker site, the billing event specifying at least (1) the anonymous ID, and (2) a monetary charge to be applied to an account of the user.

Oliver describes retrieving use-specific customization data of the user from the Clickshare/TVS dynamic session database (brokering database) and sending the customization data from there to the Clickshare Publishing Member (SP) site, the customization data indicating a user-specified preference for the customization of the information (online) sevice; adjusting the service provided from the Clickshare Publishing Member (SP) site according to the user-specified preference; and generating an enhanced log report (billing event) at the Clickshare Publishing Member (SP) site and sending that report/event to the Clickshare/TVS (online broker site), the report/event specifying at least (a) the token (anonymous identifier) specific to that particular user's and (b) a monetary charge to be applied to the account of the user.

Oliver at Page 16, Lines 14-23:

"Using the TVS model, individual publishers or service providers authenticate their own users, and then ask TVS to store the user's preference, pricing and service-class information in a "publicly accessible" place. In return, TVS provides an authentication token which is returned to the user (specifically, the user's browser). All subsequent access to any TVS-enabled service is governed by this token (non-TVS services are not affected). TVS validates the token on behalf of any individual service, and passes in return the user's profile and class information. When a server has provided service to a validated user, that server returns to TVS a record of the service provided. This record is used by TVS to generate a number of forms of usage information, particularly billing and settlement information. Periodically, this information is returned to all publishers."

Also, Oliver at Page 6, Lines 18-21:

"PERSONALIZATION -- It allows consumers to store their custom information preferences as part of their user profile and then optionally give those preferences to web publishers who wish to personalize their offerings."

16. A method as in claim 15, wherein the step of generating an encrypted authentication message comprises the steps of prompting the user for a password and using the password to generate the authentication message, the password stored in the brokering database so that the online brokering service can determine whether the

authentication message corresponds to the password.

Oliver describes a method wherein the step of generating an encrypted token (authentication message) comprises the steps of the Clickshare Service Provider prompting the user for a user-name and password, verifying that the user is registered with the provider, then requesting the Clickshare/TVS to accept certain demographic, preference and service-class information of the user into a dynamic session database in exchange for producing the encrypted token which acts as a lookup key for further access to the dynamic-session database record.

17. A method as in claim 15, wherein the step of sending the encrypted authentication message to the online broker site comprises the steps of:
sending the authentication message from the user computer to the SP site over the public network; and
sending the authentication message from the SP site to the online broker site.

Oliver describes the sending of the encrypted token by the web browser software on the end-user's computer to the Clickshare Publishing Member (SP) site, which then takes the token and submits it to the Clickshare/TVS backend 9online broker site) for authentication as matching a key to a database record in the dynamic session database.

18. A method as in claim 15, further comprising the step of processing the billing event at the online broker site to thereby apply the charge to the account of the user.

Oliver describes the processing of enhanced log reports (billing events) by the Clickshare/TVS backend (online broker site) for submission to the Clickshare Service Provider sites with whom users are registered; which Clickshare Service Providers then apply the charge(s) to the account of the user.

Oliver at Page 19, Lines 7-25 and Page 20, Lines 1-21:

"5.3.1. Server Side Components

"Clickshare Authentication Service

"This service authenticates users in real time allowing each user access to any Clickshare Service Provider without reauthentication for the duration of one session. This service is provided by a set of server machines distributed around the Internet for better fault tolerance and performance.

"Components

+ Token Validation Service (TVS) server/daemon (tvsd)

"Clickshare Logging Service

This service logs user transactions occurring at all Clickshare Service

Providers sites, in real time. The major component of this service is the Logging Facility - a large database storing all transaction records for production billing. This facility can be operated behind a firewall, due to the design of the Facility interface server.

Components

+ Clickshare Logging Facility (SQL database) (mSQL)
+ facility server interface daemon (logd)

"Clickshare Settlement Service

The service "settles" accounts receivable / accounts payable activity among the Clickshare Service Providers on a periodic basis. It interfaces to the Logging Facility database environment in an "off-line" (non real-time) manner. Activity reports are generated for all parties. An interface to the Automated Clearinghouse (ACH) allows fully automated settlement.

Components

+ settlement engine
+ interface to automated clearinghouse (ACH, Bank of Boston)

"Clickshare Billing Interface

This service provides periodic billing records and account summaries to each of the Clickshare Service Providers. It interfaces to the Logging Facility database environment through a set of billing procedures which themselves are tailored to interface with customer billing systems. Billing records are sent to the Service Providers via electronic mail. As an auxiliary capability, the Clickshare Billing Interface can generate user account update summaries upon request from the Service Providers.

Components
+ billing record generator
+ billing report generator
+ session summary generator / remailer
+ interface to Visa/MC electronic merchant vendor service"

19. A method as in claim 18, further comprising the step of providing an account statement from the online broker site to the user computer over at-least the public network, the account statement reflecting the charge specified in the billing event.

Oliver does not describe a direct-bill relationship between the Clickshare/TVS and the end-user computer.
[See comments to Claim No. 18, above]

20. A method as in claim 15, further comprising the steps of:
retrieving access rights data of the user from the brokering database, the access rights data specifying the access rights of the user with respect to the online service and/or the SP site; and
sending the access rights data from the online broker site to the SP site.

Oliver describes retrieving service-class (access rights) data of the user from the TVS dynamic session database (brokering database), the access rights data specifying the service class (access rights) of the user with respect to one or more Clickshare Publishing Member (SP) sites; and sending the service-class (access rights) data from the TVS database (brokering database) to the Publishing Member (SP) site.

Oliver at Page 16, Lines 14-23:

"Using the TVS model, individual publishers or service providers authenticate their own users, and then ask TVS to store the user's preference, pricing and service-class information in a "publicly accessible" place. In return, TVS provides an authentication token which is returned to the user (specifically, the user's browser). All subsequent access to any TVS-enabled service is governed by this token (non-TVS services are not affected). TVS validates the token on behalf of any individual service, and passes in return the user's profile and class information. When a server has provided service to a validated user, that server returns to TVS a record of the service provided. This record is used by TVS to generate a number of forms of usage information, particularly billing and settlement information. Periodically, this information is returned to all publishers."

21. A method as in claim 20, further comprising the step of interpreting the access rights data at the SP site to determine whether the user is authorized to access a particular content item of the SP site.

Oliver at Page 6, Lines 22-25:

"ACCESS CONTROL -- It permits a web site to differentiate requests for information by individual users rather than broad domains -- even if the user has never registered with that particular web site. This "Service Class" technology avoids users having to maintain multiple IDs and passwords."

Oliver at Page 7, Lines 12-14:

"INFORMATION SELLERS/RESOURCE PROVIDERS -- Operators of World Wide Web sites who wish to make money from the sale of information or software, or wish

to control access to resources."

Oliver describes the step of the Clickshare Publishing Member (SP) site interpreting service-class (access rights) data to determine whether the user is authorized to access a particular content directory (item) of the Publishing Member (SP) site.

22. A method as in claim 20, further comprising the step of sending an access rights update request from the SP site to the online broker site, the access rights update request specifying at least (1) the anonymous ID of the user, and (2) an update to be made by the online brokering service to the access rights data of the user.

Oliver does not describe the sending of updating access or service information from the Clickshare Publishing Member (SP) to the Clickshare/TVS (online broker site). Rather, Oliver describes the transmission of user preference, demographic and service-class information to the Clickshare/TVS dynamic session database by the Clickshare Service Provider at the start of a Clickshare session, such data being extracted from the local user-registration database of the Service Provider.

23. A method as in claim 15, wherein the customization data includes a connection speed at which the user computer connects to the public network, and wherein the step of adjusting comprises providing the service to the user computer at a speed which generally corresponds to the connection speed.

Oliver makes no specific mention of transferring preference data about connection speed.

24. A method as in claim 15, wherein the customization data includes a display preference for the display of a particular type of media.

Oliver makes no specific mention of transferring preference data about display of a particular type of media.

25. A method as in claim 15, further comprising the steps of:
generating a first session key at the user computer;
generating a second session key at the online broker site and sending the second session key to the SP site, the second session key corresponding to the first session key; and
using the first and second session keys to encrypt and decrypt message traffic between the user computer and the SP site as the online service is provided to the user computer.

Op. Cit., Claim No. 12

26. A method as in claim 15, wherein the public network comprises the Internet.

Op. Cit., Claim No. 13

27. A method as in claim 15, wherein the online service comprises a software download service.

Oliver describes the application of the Clickshare/TVS service for software downloads.

28. A method as in claim 15, wherein the online service comprises user access to an online version of a printed publication.

Oliver describes the application of the Clickshare/TVS service for acess to an online version of a printed publication.

Oliver at Page 7, Lines 10-17:

"3.2 PARTIES INVOLVED IN SERVICE

"The parties involved in the Clickshare/TVS service include:

"INFORMATION SELLERS/RESOURCE PROVIDERS -- Operators of World Wide Web sites who wish to make money from the sale of information or software, or wish to control access to resources. These are called Clickshare Publishing Members or Clickshare Resource Providers. Examples include: newspapers, magazines, specialty publications, new-media entrepreneurs, game vendors, software publishers, health-care providers, network or other service providers."

SECURE ACCESS TO SERVICES OVER AN UNTRUSTED NETWORK

29. A system for allowing users to securely access online service providers over an untrusted distributed network, comprising:
a plurality of Service Provider (SP) sites connected to the distributed network, each SP site running at least one service application to provide an online service to users over the distributed network;
a plurality of user computers connected to the distributed network, each user computer running at least one client application for accessing online services of the SP sites;
an online broker site connected to the plurality of SP sites, the online broker site running at least one brokering application to provide an online brokering service, the online broker site including a user database containing user-specific authentication information of users that have registered to use the online brokering service, the registered users accessing the SP sites from the users computers over the distributed network;
a database which stores user-specific customization data, the customization data specifying preferences of the registered users with respect to the online services of the SP sites, the customization data provided to the SP sites by the online brokering service to enable the SP sites to customize the online services to the preferences of individual registered users; and
an authentication protocol for allowing the online brokering service to authenticate registered users in response to user-specific authentication requests from the SP sites, the authentication requests responsive to requests from the user computers to access the online services of the SP sites, the authentication protocol implemented by software components of the user computers, the SP sites, and the

online broker site.

Oliver describes a system for allowing users to access Clickshare Publishing Members (online service providers) over the Internet (untrusted, distributed network), comprising:

A plurality of Clickshare Publishing Members (SP) and Clickshare Service Provider sites connected to the Internet (distributed network), each such Publishing Member (SP) site providing content (service application) to provide information services (online service) to users over the Internet (distributed network);

A plurality of user computers connected to the Internet (distributed network), each user computer running a web-browser client (client application) for accessing information content (online services) of the Clickshare Publishing Member (SP) sites;

A Clickshare/TVS backend (online broker site) running the TVS server software (brokering application) to provide Token Validation Services (online brokering service), the TVS/brokering site including a dynamic session database (user database) containing user-specific preference, profile and service-class (authentication) information and accessed via an encrypted token-based key, such users having registered with their Clickshare Service Provider, the registered users accessing the Publishing Member/SP sites from the users' computers over the Internet (distributed network).

A dynamic-session database (database) which stores user-specific preference, profile and service-class (customization) data specifying preferences of the registered users with respect to the information (online) services of the Publishing Member (SP) sites, the preference, profile and service-class (customization) data provided to the Publishing Member (SP) sites to enable the Publishing Member (SP) sites to customize the information (online) services to the preferences of individual registered users; and

An authentication protocol for allowing the Clickshare/TVS to validate (authenticate) registered users of the Clickshare Service Providers in response to user-specific validation (authentication) requests from the Clickshare Publishing Member (SP) sites, the validation (authentication) requests responsive to requests from the user computers to access the information (online) services of the Clickshare Publishing Member (SP) sites, the validation protocol implemented by software components of the user computer's web browser, the Clickshare Publishing Member (SP) sites and the Clickshare/TVS (online broker) site.

30. A system as in claim 29, further comprising a billing system for allowing the SP sites to charge the registered users for accesses to the online services by sending billing events to the online brokering service, the billing system including a centralized database for recording billing events to accounts of the registered users.

Oliver teaches a system further comprising a billing system for allowing the Clickshare Publishing Member (SP) sites to charge the registered users of Clickshare Service Providers for access to the information (online) services of the Clickshare Publishing Member site by sending enhanced log records (billing events) to the Clickshare/TVS (online brokering service), the billing system including a centralized logging daemon (database) for recording enhanced log records (billing events) for periodic aggregation, sorting and charging to the accounts of Clickshare Service Providers, who in turn may charge their registered users.

31. A system as in claim 30, wherein the billing system includes a billing viewer application running on the user computers, the billing viewer application allowing a registered user to view a personal billing statement stored in the centralized database, the billing statement including charges from multiple different SP sites of the

plurality of SP sites.

Oliver does not specifically describe any end-user billing applications, However:

Oliver at Page 19, Lines 16-25; Page 20, Lines 1-21:

"Clickshare Logging Service

This service logs user transactions occurring at all Clickshare Service Providers sites, in real time. The major component of this service is the Logging Facility - a large database storing all transaction records for production billing. This facility can be operated behind a firewall, due to the design of the Facility interface server.

Components

+ Clickshare Logging Facility (SQL database) (mSQL)
+ facility server interface daemon (logd)

"Clickshare Settlement Service

"The service "settles" accounts receivable / accounts payable activity among the Clickshare Service Providers on a periodic basis. It interfaces to the Logging Facility database environment in an "off-line" (non real-time) manner. Activity reports are generated for all parties. An interface to the Automated Clearinghouse (ACH) allows fully automated settlement.

Components

+ settlement engine
+ interface to automated clearinghouse (ACH, Bank of Boston)

"Clickshare Billing Interface

"This service provides periodic billing records and account summaries to each of the Clickshare Service Providers. It interfaces to the Logging Facility database environment through a set of billing procedures which themselves are tailored to interface with customer billing systems. Billing records are sent to the Service Providers via electronic mail. As an auxiliary capability, the Clickshare Billing Interface can generate user account update summaries upon request from the Service Providers.

Components
+ billing record generator
+ billing report generator
+ session summary generator / remailer

+ interface to Visa/MC electronic merchant vendor service"

Oliver at Page 36, Lines 12-17:

"This Settlement Service stores records of user access to resources by Service Provider and by user within Service Provider and prepares the records for batch deliveries to the individual user's Service Provider. The Settlement Service also outputs charge records aggregated by Service Provider in a format which can be accepted by gateways to the U.S. banking industry's Automated Clearing House (ACH) service for electronic debiting and crediting of Service Provider and Publishing Member banking accounts."

32. A system as in claim 29, further comprising an access rights database at the online broker site, the access rights database storing access rights data for a plurality of the registered users, the access rights data specifying access rights of the plurality of registered users with respect to the SP sites, the access rights data provided to the SP sites by the online brokering service.

Oliver describes a dynamic session database at the Clickshare/TVS backend (online broker site) which contains, among other things, user service-class data (access rights) provided by the user's Clickshare Service Provider, for a plurality of registered users, with respect to Clickshare Publishing Member (SP) sites, the service-class (access-rights) data provided to the Clickshare Publishing Member (SP) sites by the Clickshare/TVS backend (online brokering service).

Oliver at Page 21, Lines 16-23:

"This service allows Service Providers to register users for the purposes of access control, service customization and billing. All user demographic and financial information (in addition to preference and service classing information) is stored in these databases at each Service Provider site. Users are authenticated locally from information stored in these databases, after which a subset of the stored information is provided to the Clickshare Authentication Service so that it can help all Service Providers recognize valid Clickshare users."

33. A system as in claim 29, wherein the authentication protocol implements a challenge-response protocol.

Oliver does not specifically speak of a challenge-response protocol in the sense implied by Teper, but the interactions between Clickshare user computers and Publishing Member sites, between user computers and Service Provider sites, and between Publishing Member sites and Clickshare/TVS are typically structured as a transmission followed by a response.

34. A system as in claim 29, wherein the distributed network comprises the Internet.

Oliver describes the distributed network as "a public network" or as "the Internet."

PROVIDING FEE-BASED ONLINE SERVICE OVER DISTRIBUTED NETWORK WHILE CONCEALING PAYMENT/PERSONAL INFORMATION OF USERS

35. A method providing a fee-based online service from a Service Provider (SP) site to a user over a distributed network while concealing the payment and personal information of the user from the Service Provider, comprising the steps of:
providing an online broker site that provides an online brokering service, the online broker site having a brokering database which contains account information on the user and on other users of the online brokering service, the online broker site located remotely from the SP site;
sending an access request from a computer of the user ("user computer") over the distributed network to the SP site;
sending an authentication request from the SP site to the online broker site in response to the access request;
prompting the user for a user identifier at the user computer and sending the user identifier to the online broker site;
authenticating the user at the online broker in response to the authentication request, the step of authenticating comprising using the user identifier sent from the user computer to access the account information stored within the brokering database;
sending a verification message from the online broker site to the SP site in response to the authentication request, the verification message indicating whether the step of authenticating was successful;
retrieving access rights data of the user from the brokering database if the step of authenticating is successful, the access rights data specifying a plurality of access rights of the user with respect to the online service and/or the SP site;
sending the plurality of access rights data from the online broker site to the SP site to anonymously inform the SP site of the access rights of the user;
providing the fee-based online service from the SP site to the user computer over the distributed network only if the verification message indicates that the step of authenticating was successful;
generation a billing event at the SP site and sending the billing event to the online broker site, the billing event anonymously identifying the user to the online brokering service, the billing event including a charge for the providing of the online service to the user computer; and
updating an account of the user at the online broker site to reflect the charge included within the billing event.

Oliver describes a method providing for payment for information services or objects (fee-based online service) from a Clickshare Publishing Member (SP) website to a user over the Internet (distributed network) while concealing the payment and personal information of the user from the Publishing Member (SP), comprising the steps of:

Providing a Clickshare/TVS backend (online broker site) which provides a token-validation service (online brokering service) the TVS (online broker site) having a dynamic-session database (brokering database) which contains preference, profile and service-class (account) information on the user and the other users of the Clickshare TVS Services' Service Providers, the TVS backend

(online broker site) located remotely from the Publishing Member (SP) site;
Sending an access request from a computer of the user over the public (distributed) network to the Clickshare Publishing Member (SP) site;
Sending an authentication request from the Clickshare Publishing Member (SP) site to the TVS backend (online broker site) in response to the access request;
If the user is not validated by the TVS backend in response to the access request sent by the Publishing Member (SP) site, prompting the user for a user name/password or other user identifier and using the identifier to redirect the user to begin a session via the Clickshare Service Provider where the user is registered, then taking the unique token generated by the registration process and submitting it to the Clickshare/TVS backend for validation;
Then validating (authenticating) the user at the Clickshare/TVS backend (online broker) in response to the validation request, the step of validating comprising using the token key generated originally by the Clickshare/TVS at the user's session start and submitting it from the Clickshare Publishing Member back to the Clickshare/TVS for validation in order to access the user preference, profile and service-class (account) information stored in the Clickshare/TVS dynamic session database (brokering database);
Then sending a validation message from the Clickshare/TVS (online broker site) to the Clickshare Publishing Member (SP) site in response to the validation (authentication) request, the validation message indicating whether the step of validation (authentication) was successful;
And simultaneously retrieving and
sending along with the validation message, if successful, at least the user service-class (access-rights) data specifying a plurality of access rights of the user with respect to the information (online) service and/or the Publishing Member (SP) site;
Then providing the fee-based (information) service or object from the Publishing Member site to the user computer over the public (distributed) network or Internet, only if the authentication (verification message) was successful;
Then generating an enhanced log report (billing event) at the Publishing Member (SP) site and sending the log report/billing event to the Clickshare/TVS (online broker site), the log report uniquely (anonymously) identifying (by means of a unique alphanumeric string assigned by the user's Clickshare Service Provider), to the Clickshare/TVS (online broker), the log report (billing event) including a charge for providing of the information (online) service or object to the user computer and
Adding to a database of aggregated log reports (updating an account of the user) at the Clickshare/TVS backend (online broker site) the log report containing the charge for the object (service).

36. A method as in claim 35, further comprising the step of providing an account statement from the online broker site to the user computer over at-least the distributed network, the account statement reflecting the charge included in the billing event.

Oliver does not describe a method for providing an account statement from the Clickshare/TVS (online broker site) to the user computer. Oliver teaches a system further comprising a billing system for allowing the Clickshare Publishing Member (SP) sites to charge the registered users of Clickshare Service Providers for access to the information (online) services of the Clickshare Publishing Member site by sending enhanced log records (billing events) to the Clickshare/TVS (online brokering service), the billing system including a centralized logging daemon (database) for recording enhanced log records (billing events) for periodic aggregation, sorting and charging to the accounts of Clickshare Service Providers, who in turn may charge their registered users.

Oliver at Page 47, Lines 12-20:

"6.1.13. Depending upon the version of TVS, CALSa also copies a log report to a real-time metering and billing utility which will permit: (a) The end-using CM*a* to request and review records of current session access by clicking to an address on a web server at CSP*a*. The request generates a call from CSP*a* to CALS*a* for current-session access logs for end-user CM*a*. The logs are then parsed against credit/debit account status, pricing and service-class rules maintained by CSP*a* for its end-users, and fed into a dynamically-generated page shown to the user; or, (b) The assembly and transmission by CSP*a* via Email to the end user once in each 24-hour cycle a compilation of all TVS-enabled resource purchases or accesses during the previous period from data provided on a batch basis from CALS*a*. This permits the end-user to verify and/or dispute charges shortly after they are incurred."

A DISTRIBUTED-USER MANAGEMENT SERVICE FOR ALLOWING ANONYMOUS PURCHASE OF INFORMATION SERVICES OR OBJECTS FROM MULTIPLE WEBSITE PROVIDERS

37. An online brokering service for allowing users of a public network to anonymously purchase online services from Service Provider (SP) sites on the public network, the online brokering service provided from an online broker site that is located remotely from the SP sites, the online brokering service comprising:
a database which contains account information of users that have registered with online brokering service, the account information including at least a unique identifier of each registered user;
a billing system for recording monetary charges to accounts of registered users, the monetary charges corresponding to online services purchased from the SP sites over the public network; and
a software package running at the online broker site, the software package performing at least the following functions:
(a)authenticating registered users in response to authentication requests received from the SP sites, the authentication requests generated in response to attempts by registered users to access online services of the SP sites, said authenticating comprising accessing the database to verify user account information;
(b)receiving user-specific billing events from the SP sites and passing the billing events to the billing system to update the accounts of registered users, each billing event specifying at least (1) an anonymous ID of a registered user, and (2) a charge to be applied to the account of the registered user; and
(c) retrieving user-specific access rights data from the database in response to requests from the SP sites and transmitting the access rights data to the SP sites, the access rights data specifying a plurality of content categories or services to which a registered user has access and enabling the SP sites to provide customized access rights to the registered users.

Oliver describes Clickshare/TVS Service, which is a distributed-user management (online brokering) service for allowing users of a public network to anonymously purchase information (online) services or objects from Clickshare Publishing Member (SP) sites on the public network, the TVS Service (online brokering service) providing for a TVS backend (online broker site) that is located remotely from the

Clickshare Publishing Member (SP) sites the TVS Service comprising:

A dynamic-session database (database) which contains preference, profile and service-class (account) information of users that have registered with Service Providers of the Clickshare/TVS Service, said information including at least a unique identifier of each registered user;
A billing system for recording enhanced log records including monetary charges at the Clickshare/TVS backend for ultimate application by Clickshare Service Providers to the accounts of their registered users, the monetary charges corresponding to information (online) services or objects purchased from the Publishing Member (SP) sites over the public network; and
A software package running on the Clickshare/TVS backend, the software package performing at least the following functions:
(a) Validating (authenticating) registered users in response to validation requests from the Publishing Member (SP) sites, the validation (authentication) requests generated in response to attempts by registered user to access information (online) services or objects of the Publishing Member (SP) sites, said validation comprising accessing the dynamic-session database of the Clickshare/TVS backend to verify that it contains user preference, profile and/or service-class (account) information;
(b) Receiving user-specific enhanced log reports (billing event) from the Publishing Member (SP) sites and passing the enhanced log reports to the Clickshare/TVS backend for aggregation and sorting in a logging database (billing system), ultimately to be provided to Clickshare Service Providers for updating the accounts of their users, each enhanced log report (billing event) specifying at least (1) an anonymous ID of a registered user, and (2) a monetary value to be used to calculate a charge, if any, to be applied to the account of the registered user; and
(c) Retrieving user-specific service-class (access rights) data from the dynamic session database in response to requests from the Publishing Member (SP) sites and transmitting the service-class (access-rights) data which may reference a plurality of content directories (categories) or services to which a registered user has access, and enabling the Publishing Member (SP) sites to provide customized access rights to the registered users.

38. An online brokering service as in claim 37, wherein the software package further performs the function of:
retrieving user-specific customization data from the database in response to requests from the SP sites and transmitting the customization data to the SP sites, the customization data indicating user specified preferences for enabling the SP sites to provide user customized online services.

Oliver describes an Internet distributed-user management (online brokering) service wherein the software package further performs the function of retrieving user-specific preference, profile or service-class (customization) data from the dynamic-session database in response to requests from Clickshare Publishing Member (SP) sites and transmitting such data to the Publishing Member (SP) sites, said data being interpretable as preferences for enabling the Publishing Member (SP) sites to provide user-customized services.

39. An online brokering service as in claim 37, wherein the billing system comprises a software module for allowing the registered user to remotely access an online billing statement, the online billing statement reflecting billing events received by the online broker site from multiple different SP sites.

Oliver describes an Internet distributed-user management (online brokering) service wherein the billing system comprises a software module for allowing the registered user to remotely access an online billing statement, the online billing statement reflecting billing events received by the Clickshare/TVS Service from multiple different SP sites.

Oliver at Page 47, Lines 12-20:

"6.1.13. Depending upon the version of TVS, CALSa also copies a log report to a real-time metering and billing utility which will permit: (a) The end-using CM*a* to request and review records of current session access by clicking to an address on a web server at CSP*a*. The request generates a call from CSP*a* to CALS*a* for current-session access logs for end-user CM*a*. The logs are then parsed against credit/debit account status, pricing and service-class rules maintained by CSP*a* for its end-users, and fed into a dynamically-generated page shown to the user; or, (b) The assembly and transmission by CSP*a* via Email to the end user once in each 24-hour cycle a compilation of all TVS-enabled resource purchases or accesses during the previous period from data provided on a batch basis from CALS*a*. This permits the end-user to verify and/or dispute charges shortly after they are incurred."

40. An online brokering service as in claim 37, wherein the public network comprises the Internet.

Oliver describes the distributed network as "a public network" or as "the Internet."

41. A virtual online services network for allowing users to directly access service provider (SP) sites over a public network, comprising:
an online brokering service running on at least one site of a computer network, the online brokering service storing account and billing information for a plurality of users of the public network, each of the users having a respective account with the online brokering service, the online brokering service providing online access by the users to account-specific billing information;
a plurality of fee-based online services running on a plurality of independent service provider (SP) sites on the public network, the SP sites directly accessible to the users over the public network, each SP site being registered with the online brokering service and being configured to use the online brokering service to authenticate the users when the users connect to the SP sites over the public network, the fee-based services configured to generate account-specific billing events in response to uses of the online services by the users and to forward the billing events to the online brokering service so that the users are billed for the online services from a centralized billing location; and
a log-on protocol which allows the users to access the plurality of online services using their respective accounts with the online brokering service, the log-on protocol configured to (1) prompt a user for an account identifier, (2) cache the account identifier during the course of a user log-on session, and (3) use the cached account identifier to access multiple different SP sites, the log-on protocol

thereby allowing the user to seemlessly access the plurality of fee-based online services following a single log-on event; wherein the online brokering service stores user-specific access rights data, and provides the access rights data specifying access rights for a plurality of online services for a specific user to the SP sites in response to requests from the SP sites, and wherein the fee-based online services are configured to use the access rights data to automatically provide user-customized services to the users.

Oliver describes a distributed user-management service (virtual online services network) for allowing users to directly access Publishing Member (SP) sites over a public network, comprising:

An Clickshare/TVS service running on at least one site of a public (computer) network, the TVS service storing preference, profile and service-class (account and billing) information for a plurality of users of the public network, each of the users have a respective account with the Service Providers affiliated with the Clickshare/TVS (online brokering) service, the Clickshare/TVS Service; and,

A plurality of fee-based information (online) services running on a plurality of independent Publishing Member (SP) sites on the public network, the SP sites directly accessible to the users over the public network, each SP site being registered with the Clickshare/TVS (online brokering) service and being configured to use the Clickshare/TVS to validate (authenticate) the users when the users connect to the Publishing Member (SP) sites over the public network, the fee-based services being configured to generate account-specific enhanced log records (billing events) in response to uses of the information (online) services by the users and to forward the log records (events) to the Clickshare/TVS (online brokering) service so that the users of Clickshare Service Providers may be billed for the information (online) services by their Service Providers; and

A log-on protocol which allows the users to access the plurality of information (online) services using their respective accounts with their Clickshare Service Provider (online service), the long-on protocol being configured to (1) have their Clickshare Service Provider prompt at log-in for a unique account identifier, typically a user name and password, (2) cache the user name/password during the course of a user log-on session, and (3) use the cached account identifier to access multiple different Publishing Member (SP) sites, the log-on protocol thereby allowing the user to seamlessly access the pluraility of fee-based information (online) services following a single log-on event;

Wherein the Clickshare TVS backend stores user-specific service-class (access rights) data, and provides the service-class (access rights) data specifying access rights for a plurility of online services for a specific user to the Clickshare Publishing Member (SP) sites in response to requests from the Publishing Member (SP) sites, and wherein the fee-based information (online) servicies may be configured to use the service-class (access rights) data to automatically provide user-customized services to the users.

42. A virtual online services network as in claim 41, wherein the log-on protocol is implemented by respective software components stored on (1) the SP sites, (2) the at least one site of the online brokering service, and (3) computers of the users.

Oliver describes a distributed-user management service (network) wherein the log-on protocol is implemented by respective software components stored on (1) the Publishing Member (SP) sites, (2) at least one site of the Token Validation Service backend (online brokering service), (3) the computers of the users and (4) at the Clickshare Service Provider site where the user is registered and which holds the user's account and billing information.

Oliver at Page 12, Lines 20-25; Page 13, Lines 1-2:

"Clickshare believes that centralization of the user base for the purpose of unified registration, profiling, or measurement is a potentially non-scalable, performance-limiting approach to user management. In the TVS system, the user base is managed at the "local" (publisher/service provider) level. This has technical, sociological and financial advantages. One specific advantage is that the individual publisher/service provider is in control of the customer billing relationship. The system thus presupposes multiple billing agents and requires no centralized database of user-specific demographic data."

Oliver at Page 48, Lines 1-7:

"7.1. CONTENT REQUEST + USER AUTHENTICATION

"To begin, the user points his WWW browser to the home page set up for him at his "home" Publishing Member (step 1). This page has been designated as "authentication required" by the Publishing Member, so the user's browser receives back from the Publishing Member's HTTP server an appropriate status message. The browser prompts the user for his user-name and password, which it then returns to the HTTP server as Request Header information."

Oliver at Page 48, Lines 13-25; Page 49, Lines 1-7:

"7.2 PROFILE "REGISTRATION" AND TOKEN REQUEST

"Once the HTTP server has obtained the user's Authentication information and has validated it locally, the HTTP server contacts TVS with a request for a new Authentication Token. In making this request, the HTTP server sends the user's profile to TVS with a request for a new Authentication Token. This profile information (along with other per-user information) is stored in each publisher's registration database."

"7.3 TOKEN GENERATION AND RETURN

"TVS uses information from the user's profile to build the Authentication token. For example, the user's service class information is used to determine what the token's validity period will be. The Authentication Token has an encrypted "payload" and is "uuencoded" and "sanitized" to accommodate the Web URL naming syntax where required. The token is "opaque" to both the HTTP server and to the Web browser client.

"TVS uses private-key encryption technology which is well-known to the Internet community and unencumbered by patent or export restrictions to the best of our knowledge."

"7.4 CONTENT AND AUTHENTICATION RETURN

"When the HTTP server receives the returned token, it is ready to deliver the requested content (as well as the token) to the requesting client. The content is delivered in the canonical HTTP method (accompanied by MIME Response Headers as appropriate). The Authentication token can be delivered to the user's client program (Mosaic, Netscape, Lynx, an "agent", etc.) in several ways."

Oliver at Page 50, Lines 1-21:

"7.6 USER VERIFICATION

"The HTTP server contacts the TVS server to verify that the provided token is valid (that is, this is a valid user and a valid session)."

"7.7 VERIFICATION AND PROFILE RETURN

"The TVS server receives the request, and verifies it using the internal databases it has constructed from the information provided when Authentication Tokens are issued. As an acknowledgment, TVS returns the user's profile information to the HTTP server.

"7.8 CONTENT RETURN

"The HTTP server uses the profile information to determine how best to respond to the user's request. In some cases, information in the profile may indicate that the server should not respond -- or warn the user about the cost of nature of the information requested. The profile information returned to the HTTP server can be used by the server itself to fulfill the request (typically the case with standard "static" file service requests), and is also made available as part of the execution environment for Common Gateway Interface (CGI) scripts.

"7.9 CONTENT ACCESS LOGGING

"After the HTTP server has returned the requested content to the user, this access is logged to the TVS service. A canonical log format is currently used, with information added in keyword=value form at the end of the record.

"Steps 7.5 though 7.9 are repeated for every content/service request within a session when the user requests content from another TVS-enabled publisher. Requests sent to other (non-affiliated) HTTP servers are not affected."

43. A virtual online services network as in claim 41, wherein the log-on protocol includes a challenge-response authentication protocol for allowing the SP sites to authenticate the users.

Op. Cit., Claim No. 33: *Oliver does not specifically speak of a challenge-response protocol in the*

sense implied by Teper, but the interactions between Clickshare user computers and Publishing Member sites, between user computers and Service Provider sites, and between Publishing Member sites and Clickshare/TVS are typically structured as a transmission followed by a response.

Oliver at Page 48, Lines 1-8:

"7.1. CONTENT REQUEST + USER AUTHENTICATION

"To begin, the user points his WWW browser to the home page set up for him at his "home" Publishing Member (step 1). This page has been designated as "authentication required" by the Publishing Member, so the user's browser receives back from the Publishing Member's HTTP server an appropriate status message. The browser prompts the user for his user-name and password, which it then returns to the HTTP server as Request Header information.

"TVS does not affect the authentication model used by the HTTP server."

44. A virtual online services network as in claim 41, wherein the public network comprises the Internet.

Oliver describes the distributed network as "a public network" or as "the Internet."

45. An apparatus comprising:
A broker server operatively connected to a computer network, the broker server having a processor and a computer readable memory, the memory storing broker server implementation software, including customer access software, site linking software to link customers to selected sites on the computer network and at least one data structure;
the at least one data structure including a list of registered customers along with corresponding ID and payment information, and including a list of online sites with their corresponding linking information, the list of online sites being a subset of the sites available to users of the computer network, the at least one data structure further including access rights to a plurality of online services provided by at least one online site within the list of online sites;
whereby the broker server facilitates seamless connection between a selected customer from its list of customers and a selected online site from the listed online sites to create a virtual online service, including providing the selected customer's access rights to the plurality of online services provided by the selected online site.

Oliver describes a Clickshare/TVS (broker) server connected to a computer network, but does not describe the details of the apparatus;
Oliver describes a dynamic session database structure (data structure) including a list of unique identifying alphanumeric strings of currently authenticated registered customers of Service Provider affiliates, along with certain preference or profile attributes unique to each such

customer, and including a list of information (online) sites, with their corresponding linking information, the list of such information (online) sites being a subset of the sites available to users of the computer network, and the database (data) structure including service-class attributes (access rights) to a plurality of information (online) services provided by at least one information-providing (online) site within the list of such information sites;

Whereby the Clickshare/TVS (broker) server facilitates seamless connection between a selected customer from its dynamic session database (list) of customers and a selected information-vending (online) site from the listed information (online) sites to create a distributed-user management (virtual online) service, including providing the selected customer's service-class preferences (access rights) to the plurality of information (online) services provided by the selected information-vending (online) site.

46. An apparatus as in claim 45, wherein the computer network is a public network which comprises the Internet, and wherein the online sites are World Wide Web sites of the Internet.

Oliver describes as a reference or preferred implementation a public network comprising the Internet, wherein the information-vending (online) sites are World Wide Web sites of the Internet.

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